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Descrizione fisica	1 online resource (855 p.)
Disciplina	610 614.1 616.07 616.7
Soggetti	Medical jurisprudence Pathology Orthopedics Forensic Medicine
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Introduction to and applications of injury biomechanics -- Automotive field data in injury biomechanics -- Medical imaging and injury scaling in trauma biomechanics -- Anthropomorphic test devices and injury risk assessments -- Restraint system biomechanics -- Computational modeling in injury biomechanics -- Computational analysis of bone fracture -- Skull and facial bone injury biomechanics -- Biomechanics of brain injury: a historical perspective -- Biomechanics of brain injury: looking to the future -- Neck injury biomechanics -- Upper extremity biomechanics -- Thorax injury biomechanics -- Impact and injury response of the abdomen -- Thoracic spine injury biomechanics -- Lumbar spine injury biomechanics -- Knee, thigh, and hip injury biomechanics -- Leg, foot, and ankle injury biomechanics -- Pain biomechanics -- Thoracolumbar pain: neural mechanisms and biomechanics -- Role of muscles in accidental injury -- Pediatric biomechanics -- Best practice recommendations for protecting child occupants -- Pedestrian injury biomechanics and protection -- Design and testing of sports helmets: biomechanical practical considerations

-- Normalization and scaling for human response corridors and development of injury risk curves -- Injury criteria and motor vehicle regulations -- Civil aviation crash injury protection -- Ballistic injury biomechanics.

Sommario/riassunto

This book provides a state-of-the-art look at the applied biomechanics of accidental injury and prevention. The editors, Drs. Narayan Yoganandan, Alan M. Nahum and John W. Melvin are recognized international leaders and researchers in injury biomechanics, prevention and trauma medicine. They have assembled renowned researchers as authors for 29 chapters to cover individual aspects of human injury assessment and prevention. This third edition is thoroughly revised and expanded with new chapters in different fields. Topics covered address automotive, aviation, military and other environments. Field data collection; injury coding/scaling; injury epidemiology; mechanisms of injury; human tolerance to injury; simulations using experimental, complex computational models (finite element modeling) and statistical processes; anthropomorphic test device design, development and validation for crashworthiness applications in topics cited above; and current regulations are covered. Risk functions and injury criteria for various body regions are included. Adult and pediatric populations are addressed. The exhaustive list of references in many areas along with the latest developments is valuable to all those involved or intend to pursue this important topic on human injury biomechanics and prevention. The expanded edition will interest a variety of scholars and professionals including physicians, biomedical researchers in many disciplines, basic scientists, attorneys and jurists involved in accidental injury cases, and governmental bodies. It is hoped that this book will foster multidisciplinary collaborations by medical and engineering researchers, and academicians and practicing physicians for injury assessment and prevention and stimulate more applied research, education and training in the field of accidental-injury causation and prevention. .
